UNIVERSITY OF GONDAR

COLLEGE OF MEDICINE AND HEALTH SCIENCE

INSTITUTE OF PUBLIC HEALTH

Magnitude and Associated factors of Needle Stick and Sharp Injuries Among Dessie City Hospitals Health Care Workers, South Wollo, North East Ethiopia, 2015

BY: Solomon Assen

Advisors:

1. Mamo Wubshet(PhD,Asso.prof)
2. Manay Kifle (BSc,MPH)

A THESIS SUBMITTED TO INSTITUTE OF PUBLIC HEALTH, COLLEGE OF MEDICINE AND HEALTH SCIENCES, UNIVERSITY OF GONDAR IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF PUBLIC HEALTH

June, 2015
Gondar, Ethiopia

UNIVERSITY OF GONDAR

COLLEGE OF MEDICINE AND HEALTH SCIENCE

INSTITUE OF PUBLIC HEALTH

Magnitude and Associated Factors of Needle stick and Sharp injuries Among Dessie City Hospitals Health Care workers, South Wollo North East Ethiopia, 2015.

By: Solomon Assen
Address:
Tele: +251914717087
E-mail:sol.bissaya@gmail.com

Approved by the examining board

_____ _____

Head of Institute of public health

Advisors:

1. Mamo Wubshet (PhD, Asso.prof) _____

2. Manay Kifle (BSc, MPH) _____

Examiner

_____ _____

Acknowledgment

I would like to express my heartfelt gratitude to my advisors, Dr.Mamo Wubshet and Mr.Manay Kifle who have been a great help to the completion of this thesis starting from commenting the draft of my proposal and giving very important suggestions. I would also like to extend my appreciation goes to Gondar University and Dessie city Labour and Social Affairs office for sponsoring the thesis.

My acknowledgment also goes to Managers and head of each working department of Dessie city Hospitals. Data collectors and study participants were also would like to thank for their willingness to participate in the study. I also want to extend my gratitude to Muhajir Kebede,Addis Desseye, my family and friends for their support on social and material challenges.

Acronyms

AOR-adjusted odds ratio

CI- Confidence Interval

COR-Crude odds ratio

HBV - Hepatitis B virus

HCB – Hepatitis C virus

HCWs – Health care workers

CDC – Center for Diseases Prevention and Control

HIV – Human Immunodeficiency Virus

IV – Intra-venous

NSI – Needle stick injury

NSSIs-Needle sticks and Sharp injuries

PPE – Personal Protective Equipment

SPs-Standard Precautions

SPSS - Statistical Package for Social Science

UOG-University of Gondar

U.S-United State

WHO – World Health Organization

Table of Contents

Contents **page**

List of Tables

Table page

List of Figures

Figure page

List of Annexes

Annex page

Abstract

Background: Needle stick and sharp injuries have been recognized as one of the Occupational hazards among health care workers. Occupational exposures to needle stick and sharp injuries are substantial source of infections with blood borne pathogens among health care workers and can cause substantial health consequences and psychological stress for Health Care Workers .Needle sticks and sharp injuries increase risk of spread of diseases like HIV, Hepatitis B and Hepatitis C.

Objective: To determine the magnitude of needle stick and sharp injuries and associated factors among Dessie city hospitals health care workers.

Method: Institution based quantitative cross sectional study design was conducted from March 21-April21/2015, among health care workers who are working at least one year in Dessie city hospitals. Data was collected by structured and pretested questionnaire. The study includes 438 health care workers who were selected from the source population using simple random sampling technique. The collected data were checked, coded and entered EPI-info version 3.5.1 and exported to SPSS version 20 for analysis. Bivariate and multivariate logistic regression analyses were done to identify factors associated with needle stick and sharp injuries. Finally the P-value<0.05, results were presented with odds ratio (OR) and 95% confidence interval (CI) as well as appropriate tables and graphs.

Results: The magnitude of needle stick and sharps injuries in the last 12 months was 124(28.3%), of which 92(74.2%) was reported by male and the rest 32(25.8%) by females. Being male [AOR: 4.25, 95%CI:(2.43,7.41)],had no safety instructions in the work area[AOR:2.27,95%CI: (1.29,3.97)],had no training on safety and health[AOR:4.92,95%CI:(2.75,8.79)],had ≤ 5 years work experience [AOR:9.0,95%CI:(4.88,16.60)],recapping of used needle [AOR: 2.63, 95%CI :(1.39, 4.99)] were the variables that significantly associated with needle stick and sharps injuries.

Conclusion: This study showed high magnitude of needle stick and sharp injuries among healthcare workers. Lack of safety instructions, no occupational health and safety services like training on occupational health hazards and safety issues, recap of used needle and years of experience <5 which expose health care workers to the risk of NSSIs . Therefore, training on OSH, making available of safety instruction, and avoiding of recap of needle after used are important to reduce the risk of such injuries among health Care workers.

1. Introduction

Background: Needle sticks and sharp injuries have been recognized as one of the Occupational hazards among health care workers. Occupational exposures to needle stick and sharp injuries are substantial source of infections with blood borne pathogens among health care workers and can cause substantial health consequences and psychological stress for Health Care Workers .Needle sticks and sharp injuries increase risk of spread of diseases like HIV, Hepatitis B and Hepatitis C.

1.1Statement of the problem

Needle stick and Sharp injuries are make a hole in to body trauma caused by sharp medical equipment that were used to screen, diagnose, treat or follow the patient disease conditions(1). Types of sharp medical equipment includes suture needle, hypodermic needle, disposable needle, blood sugar lancet, surgical scalpel, trocar puncture needle, vacuum tube blood Collection needle, broken vial preparation (vials or Ampoules), razors, scissors etc(2).

Percutaneous exposures to blood and body fluids through contaminated needle-stick and sharp injuries are an important occupational hazard for morbidity and mortality from infections with blood-borne pathogens among health care workers (2). Among the 35 million health care workers worldwide, three million experience needle-stick and sharps injuries (NSSIs) every year(3). Two million of those to HBV, 0.9million HCV and 170, 000 HIV. These injuries may result in 16,000 HCV, 66, 000 HBV and 1000 HIV infections(4), with a high incidence of these injuries being reported from health care facilities in a number of countries that vary in terms of their level of economic development (5, 6). NSSIs pose a considerable risk for the transmission of more than 20 kinds of blood-borne pathogens, such as hepatitis B virus (HBV), hepatitis C virus (HCV), and human immunodeficiency virus (HIV)(7). The WHO has estimated that exposure to sharps in the workplace accounts for 40% of infections with HBV and HCV and 2-3% of HIV infections among health care workers (8).Developing countries, especially those in sub-Saharan Africa, that account for the highest prevalence of HIV-infected patients in the world also report the highest incidences of occupational exposures(9).

Occupational needle stick and sharp injuries affects the quality of health care services in addition to the health of care providers(2).Health care workers experience severe emotional distress, fear, anxiety which leads them to occupational and behavioral changes(10, 11). Health care workers in sub Saharan Africa are under paid, over worked and exposed to disease(12).

At a country level the number of health care workers that suffer from needle stick and sharp injuries remains unknown; however there are only few studies have conducted in Awassa and Amhara region east Gojjam zone health institutions, on the prevalence of needle stick / sharp injuries and associated factors. The findings of these studies well not addressed the magnitude of NSSIs among all parts of HCWs, particularly, among cleaners. Similarly, no researches have been done on this topic in the study setting.

1.2 literature review

The risks of acquiring the diseases after accidental needle stick and sharp injuries were worldwide burden of Hepatitis B disease was 350 million and Hepatitis C 150 million(3). Hepatitis C virus was not identified until 1989 and before that it was referred to as non- A, non-B, Hepatitis (13).In the united states among 4 million HCWs,400,000NSSIs occurring annually(14). In healthy blood donors the rate Hepatitis C of infection was about 0.02% in northern Europe, 6% in Africa and as high as 19% in Egypt and parts of Africa(3). In developed countries exposure to HBV amongst health-care workers is common, with an increased risk of at least 3–6 times that of the general population(8, 15), in developing countries this figure is estimated to be 6–18 times more, about 40-60% of HBV infection in health care workers were attributed to professional hazard while in developed countries the attributed fraction were less than 10% due to vaccination coverage(8).

The U.S. Centers for Disease Control and Prevention (CDC) proposed a series of procedures for preventing occupational exposures and for handling potentially infectious materials such as blood and body fluids(1). These procedures, known as standard precautions (SPs), advise health care workers (HCWs) to practice regular personal hygiene; use protective equipments such as gloves and gown whenever there is contact with mucous membranes, blood and body fluids of patients; and dispose of sharps, body fluids, and other clinical wastes properly(9).Reports indicate that standard precautions (SPs) are effective in preventing both occupational

exposure incidents and associated infections(16) .Due to this, surveillance of HCWs' compliance to SPs is an important element of occupational and nosocomial infection control as it enables assessment of risks from occupational exposure to infection(17). Studies have extensively reported suboptimal and non-uniform adherence to SPs by HCWs in both developed and developing countries (18).For instance only 58% of nurses from a study in Australia reported using gloves when handling 'blood or blood equipment(19). while 40% from a study in India recapped at least sometimes and only 32% wore eye protection when indicated (16), 3% of HCWs from a study in Nigeria reported to always recap (20), Up to half of HCWs from southern Ethiopia recapped needles(21).

1.2.1Magnitude of Needle stick and Sharp Injuries

Studies done in different countries indicated that the magnitude of needle stick and sharps injuries among HCWs was very high (17). Every year in Europe approximately 1.2 million healthcare staffs are suffered by needle stick injuries(22). The study conducted in Germany university hospital showed that 31.4% of HCWs had sustained at least one needle stick injury in one year. A wide variation in the number of reported needle stick injuries was evident across disciplines, ranging from 46.9% among medical staff in surgery and 18.7% among HCWs in pediatrics. Of all occupational groups, physicians have the highest risk to experience needles tick injuries (55.1%)(11). Reported needle stick and sharp injuries among health care workers in Greek general hospital the overall injury rate of HCWs was 2.4% per year out of the total full-time employees engaged in patient-related activities. Of the total incidents, 52.8% were reported by nurses, 27.1% by medical doctors (MDs), and 14.4% by housekeeping workers and 5.6% by medical laboratory technologists (23).

A study done among Health Care Workers in Malaysia in 2005 indicated that the prevalence of needle stick and sharp injuries were 23.5% (24). Also studies done among HealthCare Workers in a general hospital in Iran in 2009, Malaysia in 2008 , Saudi Arabia in 2002 and showed a prevalence rate of 24.9%, 74%, and 39.4% respectively(17, 24, 25). Needle stick injury exposures in African countries are higher than elsewhere(20). In Africa, the studies conducted in Nigeria, Uganda and

Kenya showed one year prevalence of needle stick/sharp object injuries were 18.5%, 32.4% and 20.2%, respectively(26-28). In Ethiopia, some studies conducted in different areas of the country showed different prevalence of needle stick/sharps injuries in those respective areas .Cross sectional study from Awassa in 2009 shows that one year prevalence of needle stick and sharp injuries were30.9%(29).A study conducted in eastern part of Ethiopia in 2010 shows that the life time prevalence of needle stick and sharp injuries were 25.7%(30).

1.2.2 Factors that affect health care workers for needle stick and sharp injuries

1.2.2.1Socio demographic factors

A case control study from china in 2009 confirms that educational level less than bachelor degree was risky for sharp injuries (31).A five year prospective study [2001-2005] in Saudi Arabia confirms that nurse profession mostly affected by sharp injuries 45.1%, followed by doctors 26.3% (25). A Malaysian study in 2010 also predict as nurse profession primarily affected by sharp injuries 27.5% (24). A 2009 study from Pretoria also confirm that among the nurse professionals were mostly affected with 43% followed by intern doctors14%(32)

A 2010 Malaysia study reveals that age greater than 35 years was risky for sharp injuries(24).A case control study from china in 2009 predict that age less than 25 years was risky for sharp injuries (31).A 2009 Pretoria study show that among the age group that sharp injuries was reported 61.9% of the needle stick and sharp injuries occur between 20-29 years, and between 30-39 years was 48% (32).A 2006 turkey study confirms that the risk of needle stick and sharp injuries was higher among health care workers of experience less than 5 years (7). A 2007 needle stick injury study from Awassa again confirms the association of profession with needle stick and sharp injuries, Nurse profession was the primary profession affected by needle stick injuries 30.3%, followed by laboratory technicians 9.3%(21) .

1.2.2.2Personal factors

Un safe injection means intraparental administration of medication that harm the patients, providers, health care waste handlers and the community (11).some unsafe

injection practice like recapping predispose health care workers to needle stick and sharp injuries (25), prevalence of recapping in eastern part of Ethiopia46.9% (21).Inappropriate disposal of health care sharp waste also risk for sharp injuries, inappropriate handling of sharp instrument was risky for sharp injuries (33).

1.2.2.3Environmental factors

Taking infection prevention training or injection safety training was protective for sharp injuries (30).All sharp injuries could be reported to the immediate supervisor a study conducted in Malaysia hospital in2010shows that 99.1%of health care workers know that needle stick injuries shall be reported(24).Studies from different parts of the world show that sharp injuries by health care workers were not reported. In 2004 survey from Sidama zone health care workers show that 32%needle sick injuries was reported (29), in 2007 Hawassa cross sectional study only 37.8% of HCW report to the nearby supervisor. The major reason for not reporting the injuries was unaware of reporting procedures(6).

The prevalence of sharp and needle stick injury in nurses in the past , nurses working more than 8 hours per day was higher than for those who worked 8 hours or fewer per day (86.5% and 77.1% respectively) ($P < 0.05$)(34).
A five year prospective cohort study from Saudi Arabia predict that working greater than 8 hours a day a predispose health care workers for needle stick and sharp injuries(35).

A 2006 cross sectional study from turkey identify that working in surgical ward was risky for needle stick and sharp injuries as compared to any ward(7).A five year prospective study in Saudi Arabia predict that working in emergency and medical ward of hospitals were risky for sharp injuries (25).A 2010 study conducted in eastern part of Ethiopia confirm that working in hospitals were risky than working any other health institutions(30).

Many medical, surgical, gynecological etc procedures performed in hospitals. They determine the risk of getting needle stick and sharp injuries. The study conducted in different parts of the world; the following result five year prospective study(2001-

2005) shows that blood collection procedures and surgical procedures were responsible for 21.8% and 14.3% needle stick and sharp injuries respectively(15).

A 2009 study from Saudi Arabia hospitals identify that from all professionally acquired needle stick and sharp injuries taking blood account for 30% of the injuries, insertion of drips15%,intramuscular insertion8%,cleaning6%,small surgical procedure5%(35).A2007 study from Awassa also show that from all needle stick injuries injection accounts for 5.6%,securing IV line 2.2%,suturing 17.8%(21).

Not all medical sharp equipment has equal risk of needle stick and sharp injuries. Some sharp medical equipment will impose high risk. Study from different part of the world results the following, a five year prospective study(2001-2005) from Saudi Arabia reveals that from all needle stick and sharp injuries, needles accounts for 55.9%,broken vials or pieces of glass 27.4%,lancet 13%(25).Also positive association between type of medical equipment and sharp injuries was proven in 2009 Saudi study, among the instruments that cause sharp injuries in Saudi hospitals injection needles constitute76.92% of the injuries, suture needles12.82%,blades7.05(35).

1.2.3The conceptual frame work

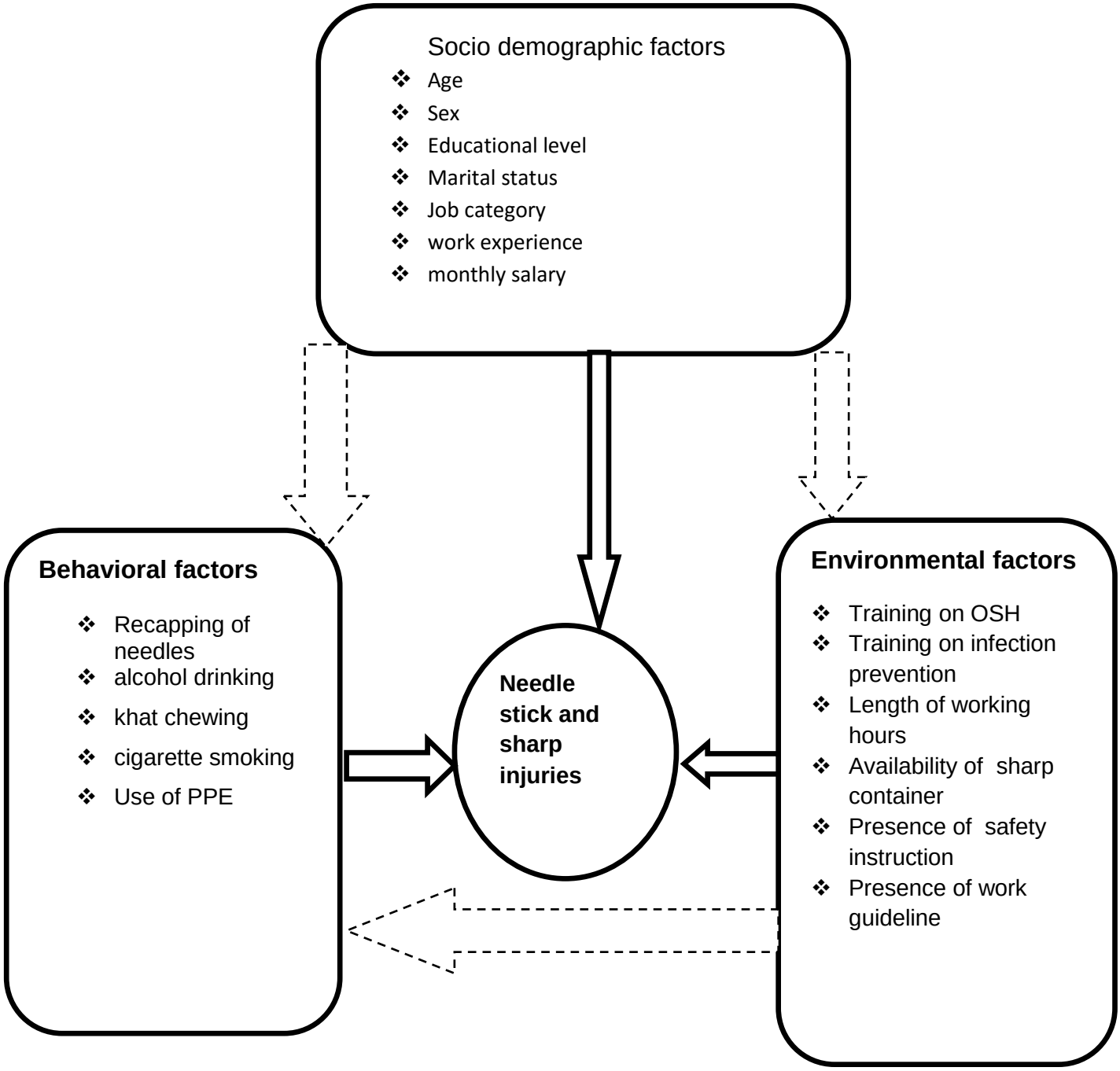


Figure1 Conceptual frame work for needle stick and sharp injuries.

(Source from different literatures)

1.3Justification of the study

In Ethiopia exposure and health impacts are rarely monitored and much remains to be done to protect HCWs from such risks that cause infections, illness, disability and death that may influence on the quality of health care.

Even though some studies have been done to assess prevalence of needle stick and sharps injuries in some parts of Ethiopia, the findings of these studies well not addressed the magnitude of NSSIs among all parts of HCWs, particularly, among cleaners. Similarly, no researches have been done on this topic in Dessie city. This study was conducted to determine the magnitude and associated factors of needle stick and sharp injuries in order to maintain the health of health care workers. The research enabled decision makers to make better decisions about prevention strategies and also updates the information for further study.

2. Objectives

2.1General objective

To assess the magnitude and associated factors of needle stick and sharp injuries among Dessie City hospitals health care workers, South Wollo North East Ethiopia,2015

2.2Specific objectives

- To determine the magnitude of needle stick and sharp injuries.
- To identify associated factors of needle stick and sharp injuries.

3. Methods

3.1Study design and period

Institutional based cross sectional quantitative study was conducted from March 21-April21/2015

3.2Study area

The study was conducted in Dessie city. The city is located 401 km from the capital city Addis Ababa in the North East direction. It is found in South Wollo Zone of the Amhara Region. There are 24 woredas found in South Wollo and Dessie city is capital of them. The city is divided in to 10 sub city Kebeles and 6 rural Kebeles with a total population of 188,519 based on current survey and 2007census.There are two governmental and three private hospitals. A total of 774 health care workers are assigned in the above health institutions to provide health services to the community.

3.3Source and study population

Source of population: All healthcare workers working in Dessie city hospitals.

Study population: All health care workers selected by simple random sampling technique (lottery method) from the source population.

3.3.1Inclusion criteria:

All health care workers working in Dessie City hospitals who participated in Screening, diagnosis, treatment, follow up of patients with the assistance of needle and sharp medical equipments and handling of waste disposal**.**

3.3.2 Exclusion criteria:

Those Health Care Workers Who were severely ill and unwilling to participate during the time of data collection.

3.4Sample size determination and sampling procedure

3.4.1Sample size determination

The Sample size was determined using a single proportion formula based on the following assumptions. The prevalence of needle stick and sharp injuries based on

study East Gojjam Zone Health Institutions 22.2%(36), margin of error 4% 95% confidence interval and 10% non-response rate; the sample size is calculated as:

$$n = \left(\frac{Z_{\alpha/2}}{d} \right)^2 P(1 - P)$$

n= sample size, P= prevalence of needle stick and sharp injury.

Z=standard normal distribution curve value for the 95% Confidence interval that is 1.96 $n = \frac{(1.96)^2 * (0.222 * (1-0.222))}{(0.04)^2} \approx 415$

10% non-response rate assumption made the total sample size = 415+42=457

Table1. Sample Size for The Key Associated Factors.

Key factors	Assumption 95%CI,80% power 1:1 ratio	Proportion of un exposed	OR	Final sample size	Reference
Supervision by concerned body		33.2	2.2	253	Aderaw, Z.
Training on injection practice		26.3	2.19	277	Tadesse M TT
Health and safety information		29	2.11	293	Aderaw, Z.

3.4. 2. sampling procedure

In Dessie city, about 774 HCWs in five hospitals, take all of them for sample selection. The study subjects are homogenous across the hospitals, but heterogeneous within job category respect to the exposure of needle stick and sharp injuries. The sample had taken from each hospital proportional allocation formula; total of457 health care workers were selected. The participants from each hospital selected using lists of health care workers from monthly payroll as a sampling frame simple random sampling technique (lottery method) was used to select the study participants**.**

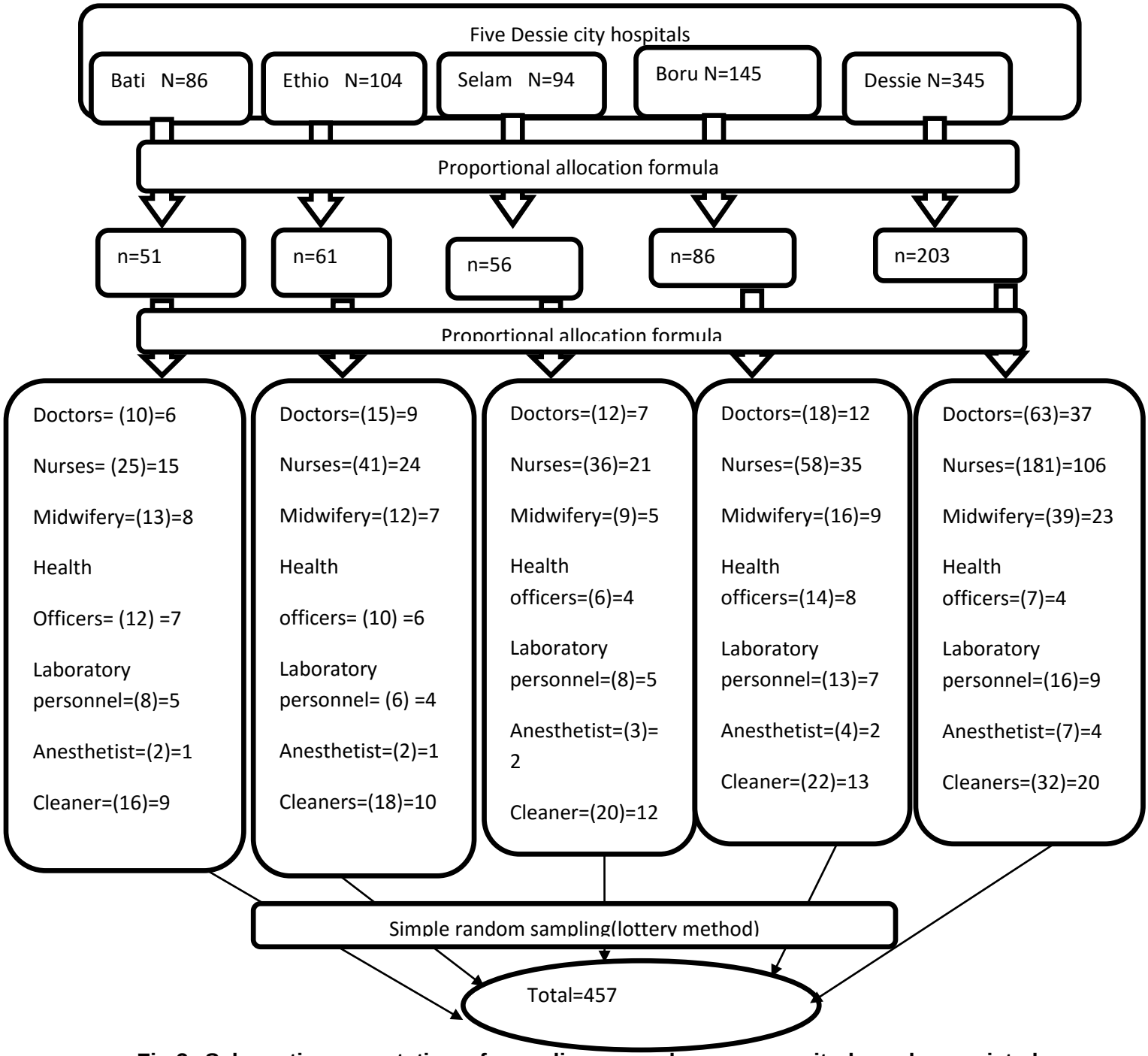


Fig.2: Schematic presentation of sampling procedure on magnitude and associated factors of needle stick and sharp injuries among dessie city hospital care workers, 2015.

3.5 Study variables

3.5.1 Dependent variable

Needle stick and Sharp injuries

3.5.2 Independent variables

Socio-demographic factors: Age, sex, educational level, marital status, job category, work experience, monthly salary

Behavioral factors: using of personal protective equipment, recapping of needles, alcohol drinking, chat chewing and Cigarette smoking.

Work environment factors: training on OSH, training on infection prevention**,** Length of working hours**,** availability of sharp container, presence of safety instruction and presence of work guideline.

3.6 Operational definition

Needle stick and Sharp injuries: body trauma occurred to health care workers during cleaning, screening, diagnosis, treatment and follow up of patient condition by any sharp medical equipment like hypodermic needles or syringes, razor, scissor, lancet or surgical instrument.

Health care workers: are those health workers working in the health institution and have contact with syringes, needles and other sharp materials due to their duties.

One year prevalence of needle stick and sharp injuries: needle stick and sharp injuries occurred during the past one year.

Work place supervision: workers perceived regular supervisions done by health and safety responsible bodies in the department and working rooms.

Personal protective equipment /PPE/ utilization: The individual -specialized clothing or equipment worn by the health care workers for protection against health and safety hazards.

Smoking: Currently smoking regardless of the number of cigarettes smoked

Drinking Alcohol: Currently drinking behavior regardless of the number of bottles

Khat Chewing: It is the practice of chewing chat leaves by the health care workers.

3.7Data collection procedures

Data were collected by interviewing health care workers using structured and pre-tested questionnaire which was developed based on related literatures having four

parts, containing socio-demographic factors, environmental factors, needle stick and sharp injuries, behavioral factors. Two supervisors (BSC nurses) and five data collectors (diploma nurses) participated in the data collection process.

3.8 Data quality control

The questionnaire was prepared in English language then translated to Amharic then back to English to keep its consistency. Pre test of questionnaires was conducted in dessie health post on 42 health care workers, and necessary corrections were made after pre test on questionnaires. The data collector and supervisor had taken 2 days training on how to collect the data, before the respondent respond to the questionnaires orientation was given. The collected data checked by the principal investigator and supervisors for its completeness.

3.9Data processing and analysis

Data was checked, coded and entered to EPI-info version 3.5.1 and exported to SPSS (Statistical Package for Social science) version 20 for analysis. Data entry made by the principal investigator. Bivariate and multivariate logistic regressions were fitted to identify factors associated with needle stick and sharp injuries. Only variables reached a p-value≤ 0.2in bivariate logistic regression analysis were included in the multivariate logistic regression model to check the confounding effects**.** Finally the p-value<0.05, results were presented with odds ratio (OR) and 95% confidence interval (CI). Descriptive statistics like frequency distribution and percentage calculation was made for most variables.

3. 10Ethical consideration

Ethical clearance was obtained from the review Ethical Committee of Institution of Public Health CMHS University of Gondar. Official letters was given to Dessie city Health office and Dessie City hospitals administration. Permission obtained from each studied hospitals. The purpose and importance of this study was explained for each study participants, verbal informed consent had taken from each study participant before they filled the questionnaires. Unwilling to participate had the right to withdraw at any time without restrictions. Not writing names of the study subjects from the questionnaire help to assure confidentiality of the information and maximum

effort was made to maintain privacy of the respondent during the data collection. If there was incident that results injury to the HCWs while collecting the data, an immediate referral to healthcare services was arranged prior to data collection. However, there was no incident that resulted injury to HCWs. Study participants were informed on common causes and methods of preventing NSSIs by the data collectors after completing data collection.

3.11Dissemination of the result

The result of the study was submitted to School of Public Health of University of Gondar. It would also be communicated to Dessie city administration Health office, Dessie city administration Labor and Social Affairs office, each studied health institutions and those organizations concerned with the promotion of Occupational health and safety at workplaces. Peer reviewed publication would also be considered.

4. Result

4.1Socio-demographic characteristics of health care workers

A total of 438(95.8%) health care workers responded with non response rate of 4.2%. Out of the total respondents 245(55.9%) were males whereas 193(44.1%) were females. Respondents' age range from 22-59 years with mean (±SD) age of the participants was 33.56±6.41.

The majority of the respondents 214(48.9%) were Orthodox followed by Muslim 160(36.5%), Protestant 58(13.2%), and catholic 6(1.4%). The socio demographic characteristics of respondents were summarized in table 2.

Table2. Socio demographic characteristics of Dessie city hospitals' health care workers for NSSI in, April, 2015.

Total study subjects(n=438)		
Variables	**Number (n)**	**Percent (%)**
Sex		
Male	245	55.9
Female	193	44.1
Age group		
18-29	142	32.4
30-44	260	59.4
≥45	36	8.2
Educational level		
≤8grade	38	8.7
9-12grade	28	6.4
Diploma	188	42.9
Degree and above	184	42.0
Marital status		
Single	117	26.7
Married	270	61.6
Others*	51	11.6
Job category		
Laboratory technologist	29	6.6

Nurse	198	45.2
Physician	64	14.6
Cleaner	65	14.8
Others**	82	18.7
Work experience		
<5years	259	59.1
≥5years	179	40.9
Monthly salary		
≤1400	66	15.1
1401-3550	209	47.7
3551-5000	99	22.6
>5000	64	14.6

Note: NSSIs = Needle Stick and Sharps Injuries**,** Others*=divorced, widow, separated others**=midwife, health officer, anesthetist

4.2 Work environment characteristics

From the total health care workers 268(61.2%) reported that their work place had no safety instruction. Similarly, 143(32.6%) of the respondents reported that they had no work guideline at their work place. About 236(53.9%) of the respondents had no taken training on occupational health and safety.

Table3. Characteristics of work environment of health care workers in Dessie City hospitals, April, 2015.

	Total (n= 438)	
Variables	**No**	**%**
presence of safety instructions at work environment		
Yes	**182**	**41.6**
No	**256**	**58.4**
presence of work guidelines at work place		
Yes	**295**	**67.4**
No	**143**	**32.6**

Ever had training on occupational health and safety		
Yes	**202**	**46.1**
No	**236**	**53.9**
Average number of hours worked per week		
≤ 48	**173**	**39.5**
>48	**265**	**60.5**
Availability of safety boxes at work place		
Yes	**267**	**61**
No	**171**	**39**
Presence of written protocol for reporting injury		
Yes	**54**	**12.3**
No	**384**	**87.7**

4.3 Magnitude of needle stick and sharps injuries

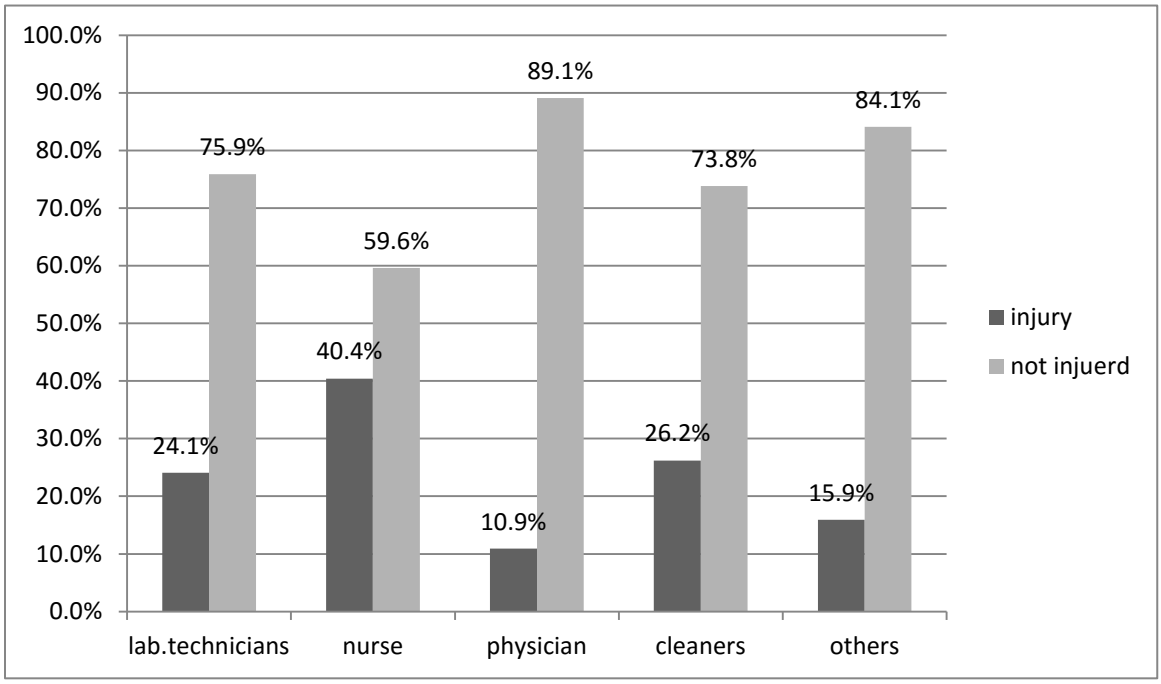
Of all (438) the study participants' prevalence of NSSIs among health care workers in the last 12 months was 124(28.3%) with95%CI (24, 34.5).

Table4. Distribution of NSSIs among Dessie City Hospitals' Health Care workers April, 2015.

Variables	**Total study subjects (n =438)**	
	No	**%**
Occurrence of NSSIs in the last 3months		
Yes	42	9.6
No	396	90.4
The frequency of NSSIs in the last 3 months		
Once	39	92.9
More than once	3	7.1
Occurrence of NSSIs in the last 12 months		
Yes	124	28.3
No	314	71.7
The frequency of NSSIs in the last 12 Months		
Once	117	94.4
More than once	7	5.6

Parts of the body with the highest frequency of NSSIs were fingers 56(45.2%) followed by palms 35(28.2%) and hands 33(26.6%).

In this study, the majority of HCWs who sustained needle stick and sharp injury were Nurses 80(40.4%) followed by cleaners17 (26.2%).



Others*=Health Officer, Midwife nurse, Aesthetician

Figure3.Bar graph showing job category and Distribution of NSSIs among Dessie city hospitals health care workers, April 2015.

The most frequent 41(33.1%) cause of NSSIs was syringe needles, which was fit with the findings of other studies (24, 35, 37). Table5. Distribution of NSSIs by parts of the body injured, types of needles/sharps caused the injury and types of injury sustained among injured health care workers in Dessie city hospitals. April, 2015.

Variables	**Total (n= 124)**	
	No	**%**
Parts of body injured		
Finger	56	45.2
Palm	36	29
Hand	32	25.8
Type of sharps that caused the injury		
Syringe needle	41	33.1

Suture Needle	22	17.7
Intravenous cannula (catheter)	22	17.7
Lancet Insulin needle	13	10.5
Scalpel blade	10	8.1
Butterfly needle	8	6.5
Glass item	6	4.8
Others*	2	1.6
Types of injury sustained		
Superficial injury (scratching of the skin without bleeding)	50	40.3
Slight skin penetration (injury to skin with bleeding)	64	51.6
Deep injury	10	8.1

Note: NSSIs = Needle Stick and Sharps Injuries, Others*=scissor, blade

Majority of the injuries 36(29%) occurred during injection, followed by operation34 (27.5%) and collecting needle and sharps after use 22(17.7%).

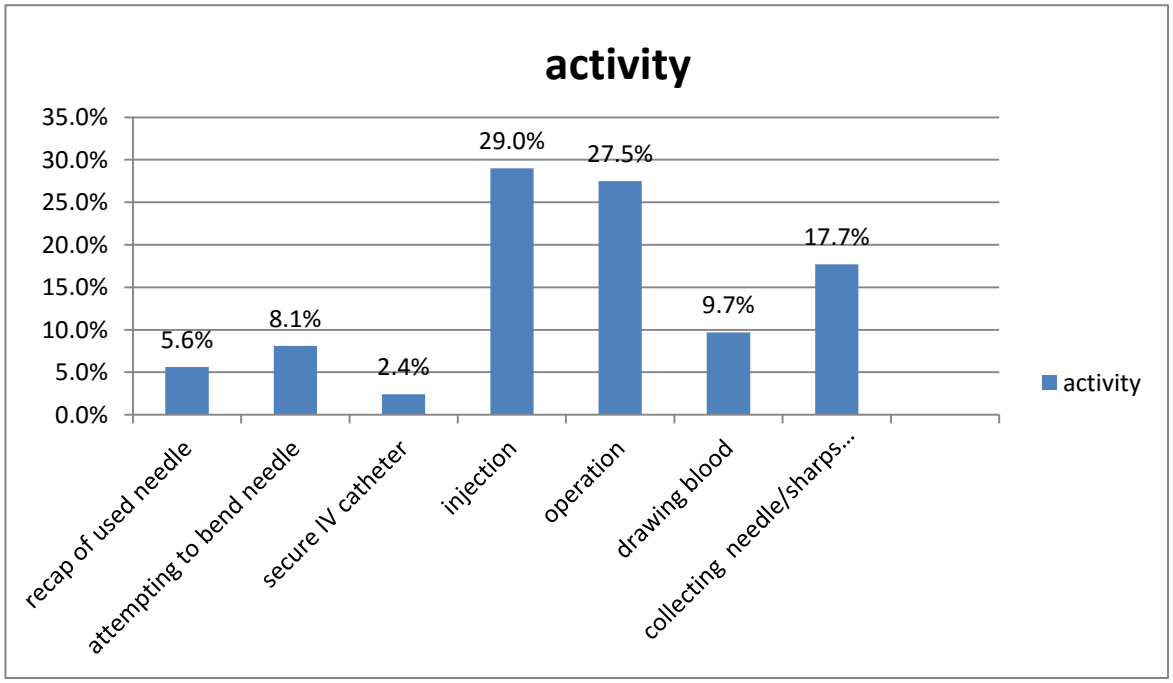


Figure4. Activities performed by health care workers at the time of injury in Dessie city hospitals, April 2015.

The highest number 61(49.2%) of the NSSIs occurred on Monday followed by Wednesday.

Table6. Days and Time of Injury of HCWs in Dessie City Hospitals, April 2015.

Variables	**injured study participants (n =124)**	
	Frequency	**%**
Days of injury		
Monday	61	49.2
Tuesday	7	5.6
Wednesday	13	10.5
Thursday	9	7.3
Friday	5	4
Saturday	1 2	9.7
Sunday	5	4
I don't remember	12	9.7
Time of injury		
Morning	55	44.4
Afternoon	33	26.6
Evening	13	10.5
Night	18	14.5
I don't remember	5	4

4.4Behavioral characteristics of HCWs

Out of total (438) HCWs, 254(58%) were concerned about needle stick/sharp injuries in their work environment. Among those 276(63%)considered needle stick/sharp injuries not avoided.From124 injured HCWs 68(54.8%) not reported their injuries, the reason for not reporting frequently mentioned were lack of support by management 27(39.7%), I don't think reporting was important 19(27.9%) cases.

From the total participants 313(71.5%) recap needle after use. only 51 (11.6%) of the respondents were not used personal protective equipment during their working procedure. The most common mentioned reason for not using PPE was discomfort when used 24(47.1%) followed by lack of protective equipment 14(27.5%).

4.5 Factors associated with needle stick and sharps injuries

The analysis was done based on the conceptual frame work illustrated in Figure.1 by Enter method to assess the relative effect of socio-demographic, environmental and behavioral factors on the outcome variable(needle stick and sharp injury).

In the bivariate logistic regression analysis, NSSI was associated significantly with sex, not having safety instruction, no training on OSH, less work experience, greater working hours/week, recapping of used needle, drinking of alcohol and chewing khat.

However, in the multivariate logistic regression analysis males [AOR: 4.25, 95%CI :(2.43, 7.41)] times more likely developed NSSIs than females.

Those respondents had no safety instruction in their work area [AOR: 2.27, 95%CI :(1.29-3.97)] were significantly at higher risk of getting NSSIs compared to those who had safety instruction.

Those respondents who ever had no training on OSH [AOR: 4.92, 95% CI: (2.75, 8.79)] were significantly at higher risk of getting NSSIs compared to those who ever had training on OSH. This finding was supported by the Study on prevalence of needle stick injuries among health care workers in a tertiary care hospital in Delhi India(15).

In this study the HCWs work experience <5 years [AOR: 9.0, 95%CI :(4.88, 16.60)] were significantly at higher risk of getting NSSIs compared to≥5years.

In the study area HCWs who were recap of used needles [AOR: 2.63, 95%CI :(1.39, 4.99)] times more likely injured compared to their counterparts.

Table7. Multivariate logistic regression analysis for potential factors associated with NSSIs among healthcare workers in Dessie city hospitals April, 2015(n = 438).

Variables	NSSIs		COR (95% CI)	AOR (95% CI)
	Yes(n=124) 28.3%	No(n=314) 71.7%		
Sex				
Male	92	153	3.03(1.91,4.79)***	4.25(2.43,7.41)***
Female	32	161	1	
Safety instruction				
No	85	171	1.82(1.18,2.83)**	2.27(1.29,3.97)**
Yes	39	143	1	
OSH training				
No	86	150	2.47(1.59,3.85)***	4.92(2.75,8.79)***
Yes	38	164	1	
Work hours/week@				
>48	87	178	1.80(1.15,2.81)**	1.57(0.92,2.68)
≤48	37	136	1	
Work experience				
<5year	100	159	4.06(2.47,6.68)***	9.0(4.88,16.60)***
≥5year	24	155	1	
Recap of used needle				
Yes	99	214	1.85(1.12,3.05)*	2.63(1.39,4.99)**
No	25	100	1	
Drink alcohol@				
Yes	28	37	2.18(1.27,3.76)**	1.30(0.64,2.65)
No	96	277	1	
Chew khat@				
Yes	40	62	1.94(1.21,3.09)**	1.68(0.92,3.06)
No	84	252	1	

Note: NSSIs (needle stick and sharp injury) * Significant at p<0.05, ** Significant at p<0.01, *** Significant at p<0.001,@ not significant in multivariate analysis

Discussion

The magnitude of NSSIs among health care workers in the last 12 months was 124(28.3%) with95%CI (24, 34.5).This finding was higher when compared to studies done in Kenya & Nigeria where the proportion of injury in one year was 20.2%, and18.5% respectively(26, 28), but concise with the study conducted in Awassa and Bahir Dar felege hiwot hospital 30.9%,31% respectively(29, 38). The possible difference in the proportion of injury could be the socio-demographic/economic status, and cultural characteristics of study participants.

Parts of the body with the highest frequency of NSSIs were fingers 56(45.2%) which was similar to study conducted in Saudi Arabia(35). This could be linked to the fact that the fingers are participated in the handling of needles and other sharps, in recapping of the needles, suturing and setting intravenous lines.

In the multivariate logistic regression analysis males [AOR: 4.25, 95%CI :(2.43, 7.41)] times more likely developed NSSIs than females. Another study in Malaysia indicated that there is a significant association between sex of the worker and the occurrence of sharp and needle stick injury among health care workers(24).This may be due to the fact that females are better in safety precautions compared to males.

Those respondents had no safety instruction in their work area [AOR: 2.27, 95%CI :(1.29-3.97)] were significantly at higher risk of getting NSSIs compared to those who had safety instruction. This finding was supported by the study conducted Needle Stick injuries among doctors working in a tertiary care hospitals of Karachi (5).

Those respondents who ever had no training on OSH [AOR: 4.92, 95% CI: (2.75, 8.79)] were significantly at higher risk of getting NSSIs compared to those who ever had training on OSH. This finding was supported by the Study on prevalence of needle stick injuries among health care workers in a tertiary care hospital in Delhi India(15).

In this study the HCWs work experience <5 years [AOR: 9.0, 95%CI :(4.88, 16.60)] were significantly at higher risk of getting NSSIs compared to≥5years. The finding was supported by the turkey study confirmed that the risk of needle stick and sharp injuries was higher among health care workers of experience < 5 years (7).

In the study area HCWs who were recap of used needles [AOR: 2.63, 95%CI :(1.39, 4.99)] times more likely injured compared to their counterparts. This finding was supported by the study conducted in southern part of Ethiopia half of HCWs recap needle after used(21). This may be due to inappropriate needle handling practice like recapping, dispose of needles and also occurred due to insufficient training of HCWs or their refusal to follow the correct procedures.

In this study, the majority of HCWs who sustained needle stick and sharp injury were Nurses 80(40.4%). It is in agreement with a study done in Pretoria, and it is much higher as compared to studies done in Kenya , Nigeria (26, 28, 32). The possible difference may be due to the ratio of nurse to people is not proportional as set by the WHO. Another explanation that may account for the highest percentage of the injuries reported by nurses was being most 198(45.2%) of study participants were nurses.

There is also greater proportion 17(26.2%) of injuries reported by cleaners compared to other health care workers. This could be due to they are usually people from the lower socioeconomic status and lower educational background; no visible programs are available to teach them the risks of occupational exposure to NSSIs.

The most frequent 41(33.1%) cause of NSSIs was syringe needles, which was fit with the findings of other studies (24, 35, 37). This might be due to syringe needles have been used in every department of the health care facilities unlike that of other sharps which have been used only in few departments.

The highest number 61(49.2%) of the NSSIs occurred on Monday. The possible explanation for this might be linked to high patient flow and heavier work load on Monday. However, in Pakistan Public Sector Tertiary Care Hospitals most injuries among healthcare workers were occurred on Saturday(39). This difference could be explained by the setup and culture difference between the two countries.

6. Strength and limitation of the study

6.1Strength of the study

- In order to increase the precision of the finding include all five hospitals found in the city.

6.2Limitation of the study

- Cross sectional study by its nature cannot establish cause and effect relationship.
- Since participants have been asked a one year exposure experience, there might be recall bias.
- The study did not include health care workers in health posts.

7. Conclusion and Recommendation

7.1Conclusion

This study showed still high prevalence of needle stick and sharp injuries among healthcare workers. lack of safety instructions , insufficient occupational health and safety services like training on occupational health hazards and safety issues, absence of written protocol for reporting needle stick and sharps injuries, which expose health care workers to the risk of NSSIs . Therefore, training on OSH, making available of safety instruction, and avoiding of recap of needle after used are important to reduce the risk of such injuries among health Care workers.

7.2Recommendation

I. For health institutions

Prepare training on

- Occupational health and Safety hazards prevention especially needle stick and sharp injuries.
- How to handling and disposal of needles and sharps.
- Establish procedure or written protocol for Recording and reporting of incidents.
- Prepare safety instruction and procedure for prevention of NSSIs.

- ❖ Extensive education will be given with more emphasis on not recapping of the needle after use.

II. For health care workers

Health care workers also need to play an active role to protect themselves and their fellow workers from NSSIs. So, they should.

- ❖ Avoid needles/sharps in appropriate way.
- ❖ Avoid poor work practices such as recapping needles and disposal of sharps.
- ❖ Report consistently cases of NSSIs for the concerned body.

III. For researchers

Further research is needed to determine the actual incidence of needle stick and sharp injury exposure, and the type of disease they would acquire.

8. References

1. NIOSH. preventing needle stick injuries in health care settings. Washington, DC:National Institute for Occupational Safety and Health, . . 1999:p. 2000-108.
2. BE F. Prevalence and determinant factors for sharp injuries among Addis Ababa hospitals health professionals. Science. 2013;1(5).
3. Petrucci C AR, Cicolini G, Cerone MP, Lancia L. Percutaneous and mucocutaneous exposures in nursing students: an Italian observational study. Journal of Nursing Scholarship. 2009;41((4)):337-43.
4. Pruss-Ustun A RE, Hutin Y. Global burden ofdisease from sharps injuries to health-care workers. Geneva. Geneva, World Health Organization. 2003.
5. Muhammad Iqbal MJ, Sidra Abbas, Khalis Ahsan Malik. Needle Stick injuries among doctors working in a tertiary care hospital of Karachi. Rawal Medical Journal. 2013;38((3)).
6. Singru SA BA. Occupational exposure to blood and body fluids among health care workers in a teaching hospital in Mumbai, India. Indian J Community Med. 2008;33(1):26-30.
7. MS T. Occupational exposure to blood and body fluids among Turkish nursing students during clinical practice training: frequency of needlestick/sharp injuries and hepatitis B immunisation. Journal of clinical nursing. 2009;18(10):1394-403.
8. V S. Hepatitis B in health care workers Indian scenario. Journal of Laboratory Physicians. 2009;1(2):41-8.
9. Nsubuga FM, Jaakkola MS. Needle stick injuries among nurses in sub-Saharan Africa. Tropical medicine & international health. 2005;10(8):773-81.
10. Do AN, Ciesielski, C.A., Metler, R.P., Hammett,T.A.,Li,J., Fleming, P.L. Occupationally acquired human immunodeficiency virus (HIV) infection:National case.surveillance data during 20 years of the HIV epidemic in the United States. Infection Control Hospital Epidemiology. 2009;24(2):86-96.
11. Wicker S JJ, Allwinn R, Gottschalk R, Rabenau F. Prevalence and prevention of needlestick injuries among health care workers in a German university hospital. Int Arch Occup Environ Health. 2007;07:1-8.
12. Lee J XN, Nicklasson L, Aaaohn J. Needle stickinjuries in the Unites States. Epidemiologic economic and quality of life issues. 2005.
13. Phillips EK OOA, Jagger J. Bloodborne pathogen exposure risk among surgeons in sub-Saharan Africa. infection control and hospital epidemiology. 2007;28((12))::1334-6.
14. McGovern P. Needlestick injuries among health care workers: a literature review. AAOHN Journal. 1999;47:237-44.
15. Sharma R RS, Verme A. Study of prevalence and response to needle stick injuries among health care workers in a tertiary care hospital in Delhi India. Journal of Community Medicine. 2010;35(1):74-7.
16. Mehta A RC, Singhal T. Interventions to reduce needle stick injuries at a tertiary care centre. Indian J Med Microbiol. 2010;28:17-20.
17. Askarian M ML, Memish ZA, Assadian O. Prevalence of needle stick injuries among dental, nursing and midwifery students in Shiraz, Iran. GMS Krankenhaushygiene interdisziplinär. 2012;7(1).

18. Dr Annette Prüss-Ustün1 DER, Dr.Yvan Hutin2. Estimation of the global burden of disease attributable to contaminated sharps injuries among healthcare workers. World Health Organization, Protection of the Human Environment (PHE), Geneva, Switzerland. 2005.
19. Mendelson MH, Chen, L.B.Y., Finkelstein, L.E.,Bailey, E., Kogan, G. Evaluation of asafety IV catheter (Insyte Autoguard, Becton Dickinson) using the Center for Disease Control and Prevention (CDC)Infection Control

Hospital Epidemiology. 2009;5:111-9.
20. Okeke E LN, Agaba E, Malu A. Hepatitis B vaccination status and needle stick injuries among medical students in a Nigerian university. Niger J Med. 2008;17((3)):330-2.
21. Beyene H, Desalegn Yirsaw B. Occupational Risk Factors Associated with Needle-Stick Injury among Healthcare Workers in Hawassa City, Southern Ethiopia. Occup Med Health Aff. 2014;2(156):2.
22. p. d. sharps injuries-stepping up to the challenge in europe. http://wwwefnwebeu/version1/en/documents/HHESharpsarticlePaulDeRaev eEFNpdf;.
23. Pournaras S. TA, Mandraveli K. et al. . Reported needle stick and sharp injuries among health care workers in a Greek general hospital. . Occupational Medicine & Health Affairs. 2010;49(7):423-6.
24. Lekhraj R. RZ, Azhar Md., Leong W. Needle Stick and Sharps Injuries and Factors Associated Among Health Care Workers in a Malaysian Hospital. Europea Journal of Social Sciences. 2010;13(3).
25. Assiri AM, Hathout HM, Anwar MM, El Dalatony MM, Abdel Kader N. Occupational Infections among Health Care Workers in a Secondary Care Hospital Saudi Arabia. Occupational Medicine & Health Affairs. 2013.
26. Adegboye AA, Moss GB, Soyinka F, Kreiss JK. The epidemiology of needlestick and sharp instrument accidents in a Nigerian hospital. Infection Control. 2011;15(01):27-31.
27. Newsom D.H. KJP. Needle-stick injuries in an Ugandan teaching hospital. Annals of Tropical Medicine and Parasitology 2011;96(5):517-22.
28. Mbaisi EM, Wanzala P, Omolo J. Prevalence and factors associated with percutaneous injuries and splash exposures among health-care workers in a provincial hospital, Kenya, 2010. Pan African Medical Journal. 2013;14(1).
29. Tadesse M TT. Epidemiology of needle-stick injuries among Health-care workers in Awassa City, Southern Ethiopia. Tropical Doctor. 2009:111-3.
30. Reda A FS, Mengiste B, Vandeweerd J. Occupational Exposure and Behavior of Health Care Workers in Ethiopia. Standard Precautions. 2010;5(12):1-6.
31. Zhang Z MK, Cai G, Ikemoto J, Kuroiwa C. Risk of sharps exposure among health science students in northeast China. Bioscience trends. 2008;2((3))::105-11.
32. Lachowicz R MP. The pattern of sharps injuries to health care workers at Witbank Hospital. SA Fam Pract. 2009;51(2):148-51.
33. Alemayehu T, Worku A, Assefa N. Community Risk Perception on Healthcare Wastes in Hospitals and Health Centres of Eastern Ethiopia. Science Journal of Public Health. 2015;3(1):37.

34. ILHAN M.N. , DURUKAN E. , ARAS E. , TU¨ TL, R. RUSA. Long working hours increase the risk of sharp and needlestick injury in nurses. Journal of Advanced Nursing

2006;56(5):563–8.
35. Ismail AA MM, Makeen A. Injection safety among primary health care workers in Jazan region, Saudi Arabia. Int J Occup Environ Med. 2014;5:155-63.
36. Aderaw Z. Assessment on magnitude of needle stick and sharp injuries and associated factors among health care workers in East Gojjam zone health institutions, Amahara Regional State, Ethiopia. Global journal of medical research. 2013;13(3).
37. Lukianskyte R GJ, Radziunaite L. Needle sticks and sharps injuries experienced by staff nurses and nursing students and their prevention. International Journal of Infection Control. 2011;8(1).
38. Walle L, Abebe E, Tsegaye M, Franco H, Birhanu D, Azage M. Factors associated with needle stick and sharp injuries among healthcare workers in Felege Hiwot Referral Hospital, Bahir Dar, Northwest Ethiopia: facility based cross-sectional survey. International Journal of Infection Control. 2013;9(4).
39. Habib H, Khan EA, Aziz A. Prevalence and Factors Associated with eedle Stick Injuries among Registered urses in Public Sector Tertiary Care Hospitals of Pakistan. 2011.

9. Annexes

Annex I: Information Sheet and Consent Form

Information Sheet and Consent form prepared for healthcare workers who are going to participate in the research project, Prevalence and associated factors of needle stick and sharp injuries among dessie city hospitals health care workers.

Title of the Research Project: Prevalence and associated factors of needle stick and sharp injuries among dessie city hospitals health care workers, south Wollo north east Ethiopia, 2015.

Name of Investigator: Solomon Assen

Name of the Organization: University of Gondar College of Medicine and Health Sciences, School of Public Health.

Name of the Sponsor: University of Gondar and Dessie city administration labor and social affair office

Introduction:

This information sheet and consent form is prepared to explain the study you are being asked to join. Please listen carefully and ask any questions about the study before you agree to join. You may ask questions at any time after joining the study.

This research team includes one investigator, two supervisors, 5 data collectors and two advisors from University of Gondar.

Purpose of Research Project

The purpose of this research is to assess Prevalence and associated factors of needle stick and sharp injuries among dessie city hospitals health care workers.

The study will be helpful in determining the current prevalence of needle stick and sharps injuries and associated factors among healthcare workers and contributes much to design appropriate intervention strategies. It also will serve as baseline information for subsequent studies in the country.

Procedure

To assess Prevalence and associated factors of needle stick and sharp injuries among dessie city hospitals health care workers, we invite you to take part in this project. If you are willing to participate in this project, you need to understand and sign the agreement form. Then after, you will be interviewed by the data collector to

give your response or the questionnaire will be given to you and you will fill it. You do not need to tell your name to the data collector and all your responses and the results obtained will be kept confidentially by using coding system whereby no one will have access to your response.

Risk/ Discomfort

By participating in this research project, you may feel that it has some discomfort especially on wasting your time about 30 minutes. We hope you will participate in the study for the sake of the benefit of the research result. There is no risk in participating in this research project.

Benefits

If you participate in this research project, there may not be direct benefit to you but your participation is likely to help us in assessing needle stick and sharps injuries among healthcare workers. Ultimately, this will help us to work on intervention strategies. The result will be disseminated dessie city health office, Labour and social affairs office.

Incentives/Payments for Participating

You will not be provided any incentives or payment to take part in this project.

Confidentiality

The information collected from this research project will be kept confidential and information about you that will be collected by this study will be stored in a file, without your name, but a code number assigned to it. And it will not be revealed to anyone except the principal investigator and will be kept locked with key.

Right to refuse or withdraw

You have full right to refuse from participating in this research. You can choose not to respond to some or all questions if you do not want to give your response. You have also the full right to withdraw from this study at any time you wish, without losing any of your right.

Person to contact:

This research project will be reviewed and approved by the ethical clearance committee of university of Gondar research and publication office. If you want to know more information, you can contact the committee through the address below. If you have any question you can contact any of the following individuals (Investigator and Advisors) and you may ask at any time you want.

Solomon Assen:

Cell phone: +251- 9 14717087

E-mail: sol.bissaya@gmail.com

Dr.Mamo Wubshet(PhD,Asso.prof.): University of Gondar, College of Medicine and Health Science, Department of Environmental and Occupational health and safety

Cell phone: +251-9 12180307

E-mail: mamowubshet@gmail.com

Mr.Manay Kifle (BSC, MPH): University of Gondar, College of Medicine and Health sciences, Department of Environmental and Occupational health and safety

Cell phone: +251-913372878

E-mail: manay2000@gmail.com

Annex II.Amharic version Information sheet

የጥናቱመረጃመስጫ

የዋና ተመራማሪው ስም - ሰለሞን አሰን

የኢንስቲትዩቱ ስም - ጎንደር ዩኒቨርሲቲ

የምርምር ወጭ የሚሸፍነው- የጎንደር ዩኒቨርሲቲ ና ደሴ ከተማ አስተዳደር ሰራተኛና ማህበራዊ ጉዳይ ቢሮ

የጥናቱ ርዕስ - -ደሴ ከተማ በሚኙ ሆስፒታሎች ላይ በሚሰሩ ጤፍሰራተኞች ላይ በሚፈ እና□በስለታምነገሮች የደረሱ ጉዳቶችን *መጠንና መንስኤ*

የጥናቱ ዓላማ፡--በደሴ ከተማ በሚኙ ሆስፒታሎች ላይ በሚሰሩ ጤፍሰራተኞች ላይ በሚፈ እና□በስለታምነገሮች የደረሱ ጉዳቶችን *መጠንና መንስኤ መለየት*

መግቢያ፡-

ይህየመረጃና፡የስምምነትውልቅፅ፡የተዘጋጀውእርስዎ፡ተሳታፊእንዲሆኑ፡ለተጋበዙበት፡በምርምር፡ ቡድኑ፡የሚካሄደውንጥናትበተመለከተየእርስዎን፡ፈቃደኛነትለማወቅ፡ነው፡፡የምርምርፕሮጀክቱዋ ናዓላማ-ደሴ ከተማ በሚኙ ሆስፒታሎች ላይ በሚሰሩ ጤፍሰራተኞች ላይ በሚፈ እና□በስለታምነገሮች የደረሱ ጉዳቶችን *መጠንና መንስኤን ለማጥናት* ነው፡፡

የጥናቱ ዘዴ፡- በሚፈ እና□በስለታም ነገሮች የደረሱ ጉዳቶችን *መጠንና መንስኤ ለመለየት* በሚደረገው ጥናት ውስጥ እንዲሳተፉ የጋበዝነዎ ሲሆን ፈቃደኛ ከሆኑ ይህንን የስምምነት ፎርም ይፈርማሉ፡፡ከዚያ በኋላ መረጃን በሚሰበስቡ የጥናት ቡድኑ አባላት አማካኝነት ምላሽዎን ለማወቅ ቃለ-መጠይቅ ይደረግለዎታል፡፡በቃለ መጠይቁ ወቅት ስመዎን መናገር አያስፈልግም፡፡ የሚሰጡት መረጃም በሚሰጥር የሚያዝ ሲሆን በተጨማሪም ማንም ሰው ወደ መረጃው እንዲቀርብ አይደረግም፡፡

የጥናቱ ጉዳት፡- ተሳታፊው በዚህ ጥናት ውስጥ በመሳተፋቸው የሚደርስባቸው ምንም አይነት ጉዳት የለም፡፡ተሳታፊው የሚሰጠው የቃለ *መጠይቅ መረጃም* በሚስጥር ስለሚያዝ ተሳታፊው ከአስተዳደራዊ ጫና ነፃ ነው፡፡

የጥናቱ ጥቅም፡- ተሳታፊው በጥናቱ ተሳታፊ በመሆናቸው በቀጥታ የሚያገኙት ጥቅም የለም፡፡

-ከዚህ ጥናት የሚገኘው ውጤት በድርጅቱና መሰል ድርጅቶች ለሚካሄዱ ተመሳሳይ ጥናቶች እንደ መነሻ ግብኣት ያገለግላል፡፡

-የጥናቱ ውጤት ለደሴ ከተማ ጤ/ቢሮ፡ ሰራተኛና ማህበራዊ ጉዳይ ቢሮ፡በጥናቱ ተሳታፊ ለሆኑት ሆስፒታሎች ይፋ ስለሚደረግ ጉዳቱን ለመከላከልና ለመቆጣጠር የሚያስችሉ መፍትሄዎችን ለመንደፍ ይጠቅማል፡፡

- ይህ መረጃ በሚሰበሰብበት ወቅት ለሚጎዳ የጤ/ሰራተኛ በሆስፒታሉ እንዲረዳ ይደረጋል ወይም የመጀመሪያ ህክምና ዕርዳታ ይሰጠዋል፡፡

ሚስጢራዊነቱ፡- በዚህ ጥናት የሚሰበሰበው መረጃ ሚጥራዊነቱ የተጠበቀ ሲሆን መረጃውም በሩይል ተደርጎ ሚስጢራዊ ኮድ ተሰጥቶት ስምዎን ሳይጨምር ተቆልፎ ይቀመጣል፡፡

የመቃወምና የማቋረጥ መብት፡- በዚህ ጥናት ላይ የመሳተፍም ሆነ ያለ መሳተፍ ሙሉ መብትዎ የተጠበቀ ነው፡፡በመሳተፍ ላይ እያሉም በማንኛውም ሰዓት ማቋረጥ ወይም ከጥያቄዎቹ ውስጥ ለመመለስ የማይፈልጉት ጥያቄ ካለ አለመመለስ ይችላሉ፡፡

ለተጨማሪ መረጃ

ሰለሞን አሰን

ስልክ: +251-914-71-70-87

E-mail:sol.bissaya@gmail.com

ዶ/ር ማሞ ወ.ብሸት

ስልክ: +251-912-18-03-07

Email:mamowubshet@gmil.com

አቶ ማናየ ክፍሌ

ስልክ: +251-913-37-28-78

Email:manay2000@gmail.com

Annex III: English version Questionnaire

University of Gondar

College of Medicine and Health Sciences

School of Public Health

Questionnaire for Assessment of Prevalence and Associated Factors of Needle stick and sharp injuries Among Dessie City Hospitals Health care workers.

Questionnaire identification number_____

Name of the hospital _____

Verbal consent form

Greeting

Hello, I am_____. I am working in the research team of University of Gondar, institution of Public Health. I would like to ask you a few questions about needle stick and sharps injury at job that happened to you in the past 12 months.

Your name will not be written in this form and will never be used in connection with any information you tell us. All information given by you will be kept strictly Confidential. Your participation is voluntary and you are not obliged to answer any question you do not wish to answer. If you feel discomfort with the interview (filling the questionnaire) please fill free to drop it any time you want. But, your willingness to answer all of the questions would be appreciated. Your correct answer to the questions can make the study achieve the goals. Therefore, you are kindly requested to respond genuinely and voluntarily with patience. Do I have your permission to continue?

1. I f yes, continue to the next page
2. If no, skip to the next participant by writing reasons for his/ her refusal

Name and Signature of the data collector who sought the consent_____

Date of interview_____ time started _____ time completed_____

Checked by supervisor: Name and signature_____

date_____, Identification No_____

Section one: Socio demographic information

No	Question	Possible Responses	code
101	Name of hospital	1.Dessie referral hospital 2.Selam hospital 3.Boru hospital 4.Bati hospital 5.Ethio hospital	
102	Sex	1. Male 2. Female	
103	Age	_____Years	
104	Religion	1. 1. Orthodox 2.Catholic 3.Protestant 4. Muslim 5. Others Specify_____	
105	Marital status	1.Single 2.married 3.divorced 4.widowed 5.cohabited	
106	Educational level	1. Illiterate 2. Read and Write 3. 1-4 Grade 4. 5-8Grade 5. 9-10 Grade 6.11-12 Grade 7.technical and vocational 8. Diploma 9.degree and above	
107	Your job category	1.laboratory technician 2.anesthetist 3.gynecologist 4.clinical nurse 5.midwife nurse 6.general practitioner 7.internist 8.health officer 9.pediatrician 10. Surgeon 11.cleaners 12. other please specify_____ _____	
108	Work experience	_____in month/years	
109	monthly salary	_____ETH BIRR/month	

Section two: Information Related to Work Environment

No	Question	Possible Responses	skip
201	Are there safety instructions at your work environment?	1. Yes 2. No	
202	Are there work procedure /guidelines at your work place?	1. Yes 2. No	
203	Have you ever had training on occupational health and safety?	1. Yes 2. No	
204	Have you ever participated training program about infection prevention caused by needle stick/sharp injury?	1. Yes 2. No	
205	Is there written protocol for reporting needle stick and sharp injuries in your organization?	1. Yes 2. No	
206	What shift had you most often been assigned to do your practice in the last 12 months? 1. 1.Day shift 2.Evening shift 3.Night shift		
207	Average number of hours worked per week?	_____	
208	In which department do you work? 1. Emergency/OPD 2.Pediatric Ward 3.delivery room 4.Laboratory Room 5.Operation Room 6.Gynecology Ward 7. Medical Ward 8. Injection and dressing room 9. Surgical Ward 10. Orthopedic Ward 11. Ophthalmology Room 12. Dental Room 13.Other(specify)_____		
209	Are there sharp containers (safety box) available at your work place?	1. Yes 2. No	IfNo,skip toQ211
210	If yes to Q 209, are they accessible and in use?	1. Yes 2. No	
211	Were you supervised by safety officer or concerned bodies?	1. Yes 2. No	
212	If yes Q. number 211, how much is the frequency?	/week/month/year	

Section Three: needle stick and Sharp injuries characteristics

No	Question	Possible Responses	Escap
301	Had you got needle stick /Sharp injury in the last 3 months?	1. Yes 2. No	If No, skip to Q303
302	If yes to Q301, how many times?	1. Once 2. 2-3 times 3. 4 & more	
303	Had you got needle stick / sharp injury in the last 12 months?	1. Yes 2. No	If No, skip to Q305
304	If yes to Q303, how many times?	1. Once 2. 2-3 times 3. 4 & more	
305	What Part of the body injured?	1. Palm 2.fingers 3. Hand 4. Leg 5. others please specify	
306	What were you doing at the time of injury? 1.Recapping of used needle 2.Attempting to bend the needle 3.Opening the needle cap 4. Dressing and injection 5.Operation 6.Drawing blood 7.collecting needle and syringe after use for disposal 8.other(specify)_ _____		
307	Type of items caused the injury? 1. Syringe needle 2.Lancet insulin needle 3. Scalpel blade 4. Intravenous cannula (catheter) 5.suture needle 6.butterfly needle 7.Glass item 8.Scissor 9.Blade 10.Other Sharp(Specify) _____		

308	Day of injury occurred? 1. Monday 2.Tuesday 3. Wednesday 4. Thursday 5frieday 6.Saturday 7. Sunday 8. I do not remember		
309	What time of injury occurred? 1. In the morning 2. In the afternoon 3. In the evening 4.In the night 5.I do not remember		
310	Did you receive medical care for your injury?	1. Yes 2. No	

Section four: Information on workers' behavior,

No	Question	Possible Responses	Code
401	Are you concerned about needle stick / sharps injury in your workplace?	1 .yes 2. No	
402	Do you consider needle/sharp injuries are avoidable?	1. Yes 2.No	
403	Did you report your injury?	1.yes 2.No	If No skip to Q405
404	If yes toQ403,to whom you report it?	1.To immediate supervisor 2.To my colleague 3.Others, (specify)__	
405	If No to Q406, what is the reason for not reporting 1.Lack of support by management 2.Fear of stigma/discrimination 3.Unaware of reporting procedure 4.Reporting is too time consuming 5.I gave emphasis to patient care 6.I thought I might be blamed or in trouble 7.I did not think it was important 8.I thought source patient was low risk for HIV 9.Others (specify)_____		
406	do you recap needles after use? 1. yes 2.NO		
407	How do recap needles after use?	1.Using single hand 2.Using two hands	

408	Do you use any personal protective equipment?	1. Yes 2. No	If No, skip to Q410
409	If yes to Q408, what type of PPE?(you can choose more than one) 1.Apron 2.Utility (double glove) 3.Head cover 4.Boots/shoe 5.Eye protectors/Goggle 6.mask 7examination glove 8.gown 9.Others(specify) _____		
410	If No Q 408, what are your reasons for not using personal protective equipment? 1. Lack of protective equipment. 2. Lack of safety and health education. 3.Discomfort during use 4.Decrease work performance 5.Create safety and health hazards 6.Other (specify)_____		
411	Do you use /drink alcohol?	1. Yes 2. No	If No,skip to Q413
412	If yes to Q No.411 often?	1. Everyday 2. 1-3 days/week 3. Occasionally	
413	Do you chew khat?	1.Yes 2. No	If No,skip to Q415
414	If yes to Q No.413 how often?	1.Every day 2. 1-3 days/week 3. Occasionally	
415	Do you smoke Cigarette	1.Yes 2. No	
416	If yes to Q No.415 how often?	1.Every day 2. 1-3 days/week 3. Occasionally	

I have completed questions, thank you for your cooperativeness for the research.

Annex IV: Amharic version questionnaire

ጎንደር ዩኒቨርሲቲ

የህክምና ጠፍ ሳይንስ ኮሌጅ

ሚዘበረሰብ ጠፍ ትምህርት ቤት

ይህ ማከይቅ ደሴ ከተማ በሚኙ ሆስፒታሎች ላይ በሚሰሩ ጠፍሰራተኞች ላይ በሚፊ እና□በስለታምነገሮች የደረሱ ጉዳቶችን ለማናት የተዘጋጀ ነው።

የፈቀደኝነት ቅፅ

ጠፍ ይስጥልኝ————————————————እባላለሁ። እዚህ የተገኘሁት ይህንን ጥናት የሚያካሂዱት ሰለሞን አሰን ይባላሉ።።በጎንደር ዩኒርሲቲ በሚዘበረሰብ ጠፍ በሚያ ደህንነትናጤንነት አስተዳደር ለሁለተኛ ዲግሪ ማሟያ ጥናት አባል በሚሆን ነው። በሆስፒታሉ ዉስጥ ባለፉት አስራሁለት ወራት በሚፊ/በስለታምነገሮች የደረሰበዎትን ጉዳቶች በተመለከተ የተወሰኑ ጥያቄዎችን ልጠይቅዎት እወዳለሁ። ከእርስዎ የሚኘውን ማንኛውም መልስ በሚስጥርእንጠብቃለን።።። ከዚህ ጥናት ጋር በተያያዘ በማንኛውም ቦታና ጊዜ ስምዎ እንደሚዘገብና እንደሚጠቀስ ልንገልጽለዎ እንወዳለን።።በጥናቱ የምሳትፍዎት የእርሰዎን ማሉ ፈቃደኛነት ስናገኝ ብቻ ነው።ለዚህ ጥናት የተሚጠቅም ሳይንሳዊ በሆነ ዘዴ ነዉ። በማከይቁ ላለማሳተፍ ወይም በማከይቁ ሂደት ሊሟሉት የሚፈልጉት ጥያቄ ያለመመለስ መብትዎ የተጠበቀ ነው።ይሁን አንጅ የአርስዎ ትብብር ትክክለኛ ምላሽ ጥናትና ምርምሩን የተሳካ ያደርገዋል።።ስለዚህ ለሞቋርብለዎት ጥያቄ ትክክለኛ ና ፈቃደኛ ሁነዉ በትእግስት እንድትሟሉልን እንጠይቃለን።።

በጥያቄው ለማሳተፍ ፈቃደኛ ነዎት?

1.አዎ ፊርማ ……..

2.አይደለም …….ተሳታፊዉዋ ፈቃደኛ ካልሆነ/ች ወደሞቋጣለው ይሽጋገሩ።።

ፍቃደኛነትን ያረጋገጠዉ የጥያቂ ስም……ፊርማ……

ማከይቁ የተሞላበት ቀን……የተጀመረበት ስዓት……የተጠቀቀበት ስዓት……

ወጠት፡ - 1 ተሚልቷል 2. ተጠያቂው አልተገኝም/ችም 3. ተቃውሞ 4. በከፊል ተሟልቷል

ስለሚጋገጠዩ ተቆጣጣሪው

ስም……ፊርማ……ቀን……

ክፍል አንድ፡ ሚዘበራዊ ስነ-ህዝብን ገጽታዎችን በተመለከተ

ተ.ቁ	ጥያቄ	አማራጭመልሶች	ኮድ
101	የሆስፒታሉ ስም	*1.*ደሴ ሆስፒታል *2.*ሰላም ሆስፒታል *3.*ቦሩ ሆስፒታል *4.*ባቲ ሆስፒታል *5.*ኢትዮ ሆስፒታል	
102	ጾታ	*1.* ወንድ *2.* ሴት	
103	እድሜ	_____ በአመት	
104	ሃይማኖት	*1.*አርቶዶክስ *2*ፕሮቴስታንት *3.*ካቶሊክ *4.* ሙስሊም *5.* ሌላ ካለ ይጠቀስ፡ _____	
105	የጋብቻ ሁኔታ	*1.*ያላገባ/ች *2.*ያገባ/ች *3.*የፈታ/ች *4.*የሞተችበት/ባት *5.*ተጋብተዉ በተለያየ ቦታ የሚኖሩ	
106	የትምህርት ደረጃ	*1.*ያልተማረ *2.* ማንበብ እና መጻፍ የሚችል *3.*የመጀመሪያ ደረጃ *1*ኛ ሳይክል ትምህርት*(1-4)* *4.* .የመጀመሪያ ደረጃ*2*ኛሳይክል ትምህርት*(5-8)* *5* . ሁለተኛደረጃ ትምህርት*(9-10)* *6.*ሙያናዶ*(11-12)* *7.*ቴክኒክና መያ ትምህርት *7.*ዲፕሎማ *8.* ዲግሪና ከዚያ በላይ	
107	የመኖ አይነት	*1.*የላብራቶሪ ባለመኖ *2.*የሰመመን መድሃኒት ሰጪ *3.*የሚዳንና ጽንስ ሀኪም *4.*ክሊኒካል ነርስ *5.*አዋላጅ ነርስ *6.*ጡቅላላ ሀኪም *7.* የጡፍ ሞካነን *8.*የዉስጥ ደዌ ስፔሻሊስት *9.*የህጻናት ሀኪም *10.* ቀዶ ጥገና ሀኪም *11.*ጽዳት *12.* ሌላ ካለ ይገለጽ_____	
108	**የስራ ልምድ**	_____በ*ዓመት*	
109	**የወር ገቢ**	_____**ብር**	

ክፍል ሁለት፡ የስራ ቦታን በተመለከተ

ተ.ቁ	ጥያቄ	አማራጭ መልሶች	ኮድ

201	በስራ ቦታዎ የደህንነት መሚያዎች አሉ?	***1.***አዎ ***2.*** የለም	
202	በስራ ቦታዎ የስራ አሰራር መሚያዎች አሉ?	***1.***አዎ ***2.*** የለም	
203	የሞያ ደህንነት ስልጠና ወስደዉያዉቃሉ?	***1.***አዎ ***2.*** የለም	
204	ስልጠና በተላላፊ በሽታዎች ማከላከያ ላይ ወስደዋል?	***1.***አዎ ***2.*** የለም	
205	ማከሪያ ቤትዎ በሚፈና ስለታምነገሮች የሚሞጣጉዳቶችን ሪፖርት ሞድረጊያ ፎርም አለ	***1.***አዎ ***2.*** የለም	
206	ባለፉት ***12*** ወራት በአብዘሀኛዉ በየትኛዉ የስራ ፈረቃ ተሞድበዉ ነበር?	***1.***ቀን ***2.*** ማታ ***3.***ሌሊት ***4.***ሌላ ካለ ይጥቀሱ	
207	በሳምንት ዉስጥ በአማከይ ምን ያህል ሰአታት ይሰራሉ?	_____	
208	በየትኛዉ የስራ ክፍል ይሰራሉ? ***1.***ድንገተኛ ክፍል ***2.***ህጻናት ክፍል ***3.***ማሞለጃ ክፍል ***4.*** ላብራቶሪክፍል ***5.***ቀዶ ጥገና ክፍል ***6.***የማህጸንና ጽንስ ክትትል ክፍል ***7.***የዉስጥ ደዌ ክትትል ክፍል ***8.***የቁሰልና ሚፈ ክፍል ***9. .***ቀዶ ጥገና ማገማያክፍል ***10.*** አጥንት ክፍል ***11.***የአይን ክፍል ***12.*** የጥርስ ክፍል ***13 .***ሌላ ካለ ይገለጽ_____		
209	የስለታም ማከሪዎች ማስቀሞጫ(የደህንነት ሳጥን)አለ?	***1.***አዎ ***2.*** የለም	ሜልሰዎ የለም ከሆነ ወደ ጥያቄ ቁጥር ***211***ይሸጋገሩ
210	ካለ ለማከቀም ተደራሽና በአገልግሎት ላይ ናቸዉ?	***1.***አዎ ***2.*** የለም	
211	በስራ ተቆጣጣሪዎች ወይም ሀላፊዎች ክትትል ይካሄዳል?	***1.***አዎ ***2.*** የለም	

212	ለጥያቄ ***211*** አዎ ካሉ ለምን ያህል ጊዜ ይካሄዳል? _____ _____/በሳምንት/በወር/በአመት	

ክፍል ሶስት፡ ሚፈና ስለታምነገሮች ጉዳትን በተመለከተ

ቁጥር	ጥያቄ	**አማራጭመልሶቸች**	ኮድ
301	ባለፉት ሶስት ወራት ዉስጥ የደረሰበዎት የሚፈ/ስለታምነገሮች ጉዳት አለ?	***1.***አዎ ***2.***የለም	መልሰዎ የለም ከሆነ ወደ ጥያቄ ቁጥር ***303***ይሸጋገሩ
302	ለጥያቄ***(301)***አዎ ከሆነ መልስዎ ስንት ጊዜ?	***1.***አንድ ጊዜ ***2. 2-3***ጊዜ ***3. 4*** እና ከዚያ በላይ	
303	ባለፉት አስራ ሁለት ወራት ዉስጥ የደረሰበዎት የሚፈ/ስለታምነገሮች ጉዳት አለ?	***1.***አዎ ***2.***የለም	
304	ለጥያቄ***(303)***አዎ ከሆነ መልስዎ ስንት ጊዜ?	***1.***አንድ ጊዜ ***2. 2-3***ጊዜ ***3. 4*** እና ከዚያ በላይ	
305	በጉዳቱ የተጎዳ የሰዉነት ክፍል የትኛዉነዉ? ***1.*** ሜዳፍ ***2.***የእጅ ጣት ***3.*** እግር ***4.*** ሌላ ካለ ይገለጽ፡ _____		
306	ጉዳቱ በደረሰበት ወቅት ምን ሲሰሩ ነበር? ***1.***ሚፈዉን መልሼ ስከድን ***2.***የሚፈዉን ቆፍ ሳጎብጥ ***3.***የሚፈን ክዳን ሳወጣ ***4.*** ሚፈ ስወጋና ቁስል ሳሽግ ***5.***ቀዶ ጥገና ስሰራ ***6.***ደም ስቀዳ ***7.***ያገለገሉ ሚፈዎች፣ስሪንጅ ስለታምነገሮች ለማንል ስሰበስብ ***8.*** ሌላ ካለ ይገለጽ፡ _____		
307	ጉዳት ያደረሰበዎ የማሪያ አይነት? ***1.*** የስሪንጅ ሚፈ ***2.***የስኪር ህመምተኞች ሚፈ ***3.*** የቀዶ ጥገና ማሪያ ምላጭ ***4.***የደም ስር ሚፈ ***5.*** የቀዶ ጥገና ክር ማፊያ ሚፈ ***6.***የህጻናት የደም ስር ሚፈ ***7.***ብርጭቆ ነክ ***8.***መቀስ ***9.***ምላጭ ***10.***ሌላ ካለ ይጥቀሰ፡ _____		
308	ጉዳት የደረሰበዎት ቀን? ***1.*** ሰኞ ***2.*** ማክሰኞ ***3.*** ረቡእ ***4.*** ሀሙስ ***5*** አርብ ***6.***ቅዳሜ ***7.***አሁድ ***8.*** አላስታዉስም		
309	ጉዳት የደረሰበዎት ሰዓት? ***1.*** ጧት ***2.***ከሰዓት ***3.*** ማታ ***4.*** ሌሊት ***5.***አላስታዉስም		
310	ለደረሰበዎት ጉዳት የህክምና አገልግሎት አግኝተዉ	***1.***አዎ	

	ነበር?	2.የለም	

ክፍል አራት፡ የሰራተኛዉን ባህሪ በተመለከተ

ተ.ቁ	ጥያቄ	አማራጭመልሶች	ኮድ
401	በስራ ቦታ ላይ ስለ ሚፈ/ስለታምነገሮች ጉዳት ታስባለህ?	1.አዎ 2. የለም	
402	በሚፈ/በስለታምነገሮች የሚሞላ ጉዳት ይወገዳል ብለዉ ያስባሉ?	1.አዎ 2. የለም	
403	ስለደረሰብህ/ሽ ጉዳት ሪፖርት አድርገሀል/ሻል?	1.አዎ 2. የለም	መልሰዎ የለም ከሆነ ወደ ጥያቄ ቁጥር 405ይሸጋገሩ
404	ለጥያቄ 403 አዎ ካሉ ለማን ሪፖርት አደረጉ?	1.ለቅርብ ተቆጣጣሪ 2.ለስራ ባልደረባ 3.ሌሎች ካለ(ይጥቀሱ)__	
405	ለጥያቄ 403 የለም ከሆነ ለምን ሪፖርት አላደረጉም? 1.በሜጅሞቱ ድጋፍ ስለማይደረግ 2.ማለል/አድሎን በመፍራት 3.ስለ ሪፖርቱ አካሄድ ግንዛቤዉ ስለሌለኝ 4. ሪፖርት ሞድረግ ብዙ ጊዜ ስለሚወስድ 5.ለበሽተኛ ትኩረት ስለምሰጥ 6.ቅሬታ ያሳድርብኛል ብየ ስለማስብ 7.በሽተኛዉለ ኤች.አይ.ቪ የመጋለጡሁኔታ ዝቅተኛ ነዉ ብየ ስለማስብ 8.ሌላ ካለ ይጥቀሱ _____		
406	ሚፈዎችን ከተጠቀሙ በኃላ ምን ያህሉን መልሰዉ ይከድኑዋቸዋል?	1አዎ 2.የለም	
407	ሚፈዎችን ከተጠቀሙ በኃላ እንዴት መልሰዉ ይከድናሉ?	1.በአንድ እጅ 2.በሁለት እጅ	
408	በስራ ቦታዎ የጉዳቶች መከላከያ መሳሪያ ተጠቅሚዉ ያዉቃሉ?	1አዎ 2.የለም	መልሰዎ .አላቅም ከሆነ ወደ ጥያቄ ቁጥር 410ይሸጋገሩ
409	ተጠቅሚዉ የሚያዉቁ ከሆነ ምን አይነት(ከአንድ በላይ መልስ መስጠት ይቻላል? 1.የአደጋ መከላከያ ጋዎን (የፕላስቲክ) 2.የጽዳት ጓንት 3.የእራስ ሽፋን 4. የአደጋ መከላከያ ጭማ 5.የአይን መከላከያ መጸር 6.ማስክ 7.የምርመራ ጓንት 8.ጋዎን 9.ሌላ ካለ ይገለጽ_____		
410	ተጠቅሚዉ የሚያዉቁ ከሆነ ምክኒያትዎ ምንድን ነዉ?1.የመከላከያ መሳሪያዎች		

	ባለሞራቸዉ **2.**የ ደህንነ ትና ጤ ና ትምህርት ስለሚሰጥ **3.**ለአጠቃቀም ምቹ ስላልሆነ **4.**የ ስራ አፈጻጸምን ስለሚቆጣጠ ስ **5.**የ ደህንነ ትና የ ጤ ና ጠንቅ ሊያስከትል ስለሚቻል **6.**ሌላ ካለ የ ጥቀሱ_____		
411	የ አልኮል ተጠቃሚነ ዎት?	**1.**አ ዎ **2.**አ ይደለ ሁም	ሜ ልሰ ዎ አ ይደለ ም ከ ሆነ ወደ ጥያ ቄ ቁ ጥር **413**ይሸ ጋገ ሩ
412	ለ ጥያ ቄ ***411*** ሜ ልሰ ዎ አ ዎ ከ ሆነ ለ ምን ያ ህል ጊ ዜ?	**1.**በ የ ቀ ኑ **2.**በ ሳ ምን ት **2-3**ቀ ን **3.**አ ል ፎ አ ል ፎ	
413	ጫ ች ቃ ሚ ነ ዎት?	**1.**አ ዎ **2.**አ ይደ ለ ሁም	ሜ ልሰ ዎ አ ይደ ለ ም ከ ሆነ ወደ ጥያ ቄ ቁ ጥር **415**ይሸ ጋገ ሩ
414	ቃ ሚ ከ ሆኑ ለ ምን ያ ህል ጊ ዜ?	**1.**በ የ ቀ ኑ **2.**በ ሳ ምን ት **2-3**ቀ ን **3.**አ ል ፍ ፎ አ ል ፎ	
415	ሲ ጋራ አ ጫ ሽ ነ ዎት?	**1.**አ ዎ **2.**አ ይደ ለ ሁም	
416	ሲ ጋራ አ ጫ ሽ ከ ሆኑ ለ ምን ያ ህል ጊ ዜ?	**1.**በ የ ቀ ኑ **2.**በ ሳ ምን ት **2-3**ቀ ን **3.**አ ል ፎ አ ል ፎ	

ስለ ትብብርዎ ከልብ እናመሰግናለን፡ ፡

Annex V.Declaration

I, the undersigned, senior MPH student declare that this thesis is my original work in partial fulfillment of the requirement for the degree of masters of public health.
Name: Solomon Assen
Signature: _____

Place of submission: School of public health, College of medicine and health Science, University of Gondar.

Date of submission: _____

This thesis work has been submitted for examination with our approval as university Advisors

Advisors:

Name Signature Date

1. Dr.Mamo Wubshet (PhD,Asso.Prof.) _____
2. Mr.Manaye Kifle (BSC, MPH) _____